

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1.-10. (Cancelled).

11. (Currently Amended) The deviceanalysis apparatus of Claim 1019, wherein at least one of the two concave mirrors associated with a pair of receivers is formed as an aspheric concave mirror.

12. (Currently Amended) The deviceanalysis apparatus of Claim 1011, wherein the aspheric concave mirror constitutes a section of a spheroid.

13. (Currently Amended) The deviceanalysis apparatus of Claim 1019, wherein thesaid radiation source is an electrically modulable plane radiator.

14. (Currently Amended) The deviceanalysis apparatus of Claim 1019, wherein the absorption chamber is formed by an interior of a housing andsaid pair of the concave mirrors are formed integrally with thesaid housing so that said concave mirrors function as interior surfaces of said housing that define said chamber.

15. (Cancelled).

16. (Cancelled).

17. (Currently Amended) The deviceanalysis apparatus of Claim 1621, wherein at least said the first part of said housing part with the concave mirrors is made of metal.

18. (Currently Amended) The deviceanalysis apparatus of Claim 1621, wherein said the first part of said housing part is made from aluminum.

19. (New) An analysis apparatus, said apparatus including:

a housing, said housing shaped to define an enclosed chamber for receiving a specimen to be analyzed;

a radiation source mounted to said housing, said radiation source configured to emit radiation at a first wavelength that is absorbed by a first substance in the specimen, said radiation source being mounted to said housing to emit radiation into the chamber;

a first pair of spaced-apart receivers mounted to said housing, each said receiver configured to measure radiation at the first wavelength and being mounted to said housing to receive radiation from within the chamber; and

a first pair of concave mirrors that are disposed in the housing chamber, said mirrors being shaped and positioned in the chamber to split the radiation emitted by said source into two separate beams of the radiation, each beam of radiation being directed to a separate one of said receivers that form said first pair of said receivers and so that the paths of travel of the radiation beams from said source to said receivers are of different lengths.

20. (New) The analysis apparatus of Claim 19, wherein:

said housing is formed from a plurality of separate parts; and

said first pair of concave mirrors are formed in one of said parts of said housing so that each said mirror functions as an interior surface of said housing that defines the chamber.

21. (New) The analysis apparatus of Claim 19, wherein:
said housing is formed from a plurality of separate
parts;

said first pair of concave mirrors are formed in a first
one of said parts of said housing so that each said mirror
functions as an interior surface of said housing that defines
the chamber; and

said radiation source and said pair of receivers are
mounted to a second one of said parts of said housing, the
second part being separate from the first part.

22. (New) The analysis apparatus of Claim 19, wherein:
said radiation source is further configured to emit
radiation at a second wavelength that is different from the
first wavelength, the second wavelength radiation being
radiation that is absorbed by a second substance different
from the first substance in the specimen;

a second pair of spaced-apart receivers mounted to said
housing, each said receiver configured to measure radiation at
the second wavelength and being mounted to said housing to
receive radiation from within the chamber; and

a second pair of concave mirrors disposed in the housing
chamber, said second pair of mirrors being shaped and
positioned in the chamber to split the radiation emitted by
said source into two beams, each beam of radiation being
directed to a separate one of said receivers that form said
second pair of said receivers and so that paths of travel of
the radiation beams from said source to said receivers forming
said second pair of receivers are of different lengths.

23. (New) The analysis apparatus of Claim 19, wherein
said first pair of mirrors are formed out of a single piece of
material.

24. (New) The analysis apparatus of Claim 19, wherein said housing is arranged and said mirrors forming said first pair of concave mirrors are positioned so that a first one of the radiation beams has a sensor-to-receiver path of travel that is at least 4 times greater than the sensor-to-receiver path of travel of the second one of the radiation beams.

25. (New) An analysis apparatus, said apparatus including:

a housing, said housing having interior surfaces that are shaped to define an enclosed chamber for receiving a specimen to be analyzed;

a radiation source mounted to said housing, said radiation source configured to emit radiation at a first wavelength that is absorbed by a first substance in the specimen, said radiation source mounted to said housing to emit radiation into the chamber;

a first pair of spaced-apart receivers mounted to said housing, each said first pair receiver configured to measure radiation at the first wavelength and being mounted to said housing to receive radiation from within the chamber; and

a first pair of concave mirrors formed by interior surfaces of said housing, said mirrors being shaped and positioned in the chamber to split the radiation emitted by said source into two beams, a first one of the beams being directed to a first one of said receivers of said first pair of receivers and a second one of the beams being directed to a second one of said receivers of said first pair of receivers and so that paths of travel of the radiation beams from said source to said receivers are of different lengths, wherein said first pair of concave mirrors are formed out of a single piece of material that forms said housing.

26. (New) The analysis apparatus of Claim 25, wherein at least one of said mirrors is an aspheric concave mirror.

27. (New) The analysis apparatus of Claim 25, wherein at least one of said mirrors is an aspheric concave mirror that is a section of a spheroid.

28. (New) The analysis apparatus of Claim 25, wherein said radiation source is an electrically modulable plane radiator.

29. (New) The analysis apparatus of Claim 25, wherein said housing is formed out of plural parts that are secured together, each said part having at least one surface that functions as a chamber-defining interior surface of said housing.

30. (New) The analysis apparatus of Claim 25, wherein: said housing is formed out of first and second parts that are secured together, the first and second housing parts each having at least one surface that functions as a chamber-defining interior surface of said housing;

 said first pair of mirrors are formed on the first part of said housing; and

 said radiation source and said first pair of receivers are mounted to the second part of said housing.

31. (New) The analysis apparatus of Claim 25, wherein at least the first part of said housing is formed from metal.

32. (New) The analysis apparatus of Claim 25, wherein at least the first part of said housing is formed from aluminum.

33. (New) The analysis apparatus of Claim 25, wherein:

said radiation source is further configured to emit radiation at a second wavelength different from the first wavelength, the second wavelength radiation being radiation that is absorbed by a second substance different from the first substance in the specimen;

 a second pair of spaced-apart receivers is mounted to said housing, each said second pair receiver configured to measure radiation at the second wavelength and being mounted to said housing to receive radiation from within the chamber; and

 a second pair of concave mirrors formed by the material from which said first pair of concave mirrors are formed, said second pair of mirrors being shaped and positioned in the chamber to split the radiation emitted by said source so that two separate beams of radiation are directed to each of said receivers that form said second pair of said receivers and so that paths of travel of the radiation beams from said source to said receivers forming said second pair of receivers are of different lengths.

34. (New) The analysis apparatus of Claim 25, wherein:

 said housing is formed out of first and second parts that are secured together, the first and second parts each having at least one surface that functions as a chamber-defining interior surface of said housing;

 said pairs of mirrors are formed from the first part of said housing; and

 said radiation source and said pairs of receivers are mounted to the second part of said housing.

35. (New) The analysis apparatus of Claim 25, wherein said housing is arranged and said mirrors forming said first pair of concave mirrors are positioned so that a first one of the radiation beams has a sensor-to-receiver path of travel

that is at least 4 times greater than the sensor-to-receiver path of travel of the second one of the radiation beams.